

WHAT IS CLAIMED IS:

1. A plant comprising a nucleotide sequence having a modified ARF GAP domain, wherein said plant has decreased organ abscission relative to a plant not having a modified ARF domain.
2. The plant of Claim 1, wherein the organ abscission comprises floral abscission.
3. The plant of Claim 1, wherein the nucleotide sequence is SEQ ID NO: 3 or SEQ ID NO: 5.
4. The plant of Claim 1, wherein the plant is *Arabidopsis thaliana*.
5. The plant of Claim 1, wherein said decreased organ abscission comprises abolished organ abscission.
6. An isolated nucleotide sequence that hybridizes to the complement of the sequence shown in SEQ ID NO: 3 or SEQ ID NO: 5 under moderate stringency, wherein expression of said nucleotide sequence in a plant results in reduced or abolished abscission.
7. The nucleotide sequence of Claim 6, wherein said nucleotide sequence comprises SEQ ID NO: 3 or SEQ ID NO: 5.
8. A method of preventing organ loss in a plant, comprising:
mutating the ARF GAP domain of a gene in a plant; and
determining if said mutation results in the prevention of organ loss in said plant.
9. The method of Claim 8, wherein said organ loss is floral organ loss.
10. The method of Claim 8, wherein said mutating comprises exposure to ethyl methanesulphonate (EMS).
11. The method of Claim 8, wherein said gene comprises the nucleotide sequence of SEQ ID NO: 1.
12. The method of Claim 8, wherein said mutating results in said gene expressing a protein that is not full-length.
13. The method of Claim 8, wherein said mutating results in said gene expressing an inactive protein.
14. The method of Claim 8, wherein said mutating introduces a stop codon into said gene.

15. A isolated polypeptide comprising the amino acid sequence of SEQ ID NO: 4 or SEQ ID NO: 6.